

FAME INSTRUMENT OPTICS

Lynn Huff

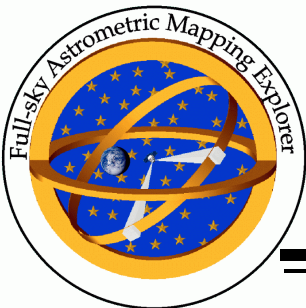
FAME Technical Interchange Meeting

September 20, 2001

REVISED September 24, 2001

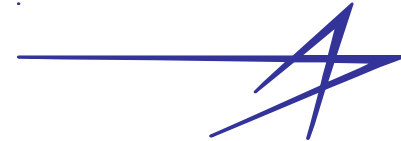
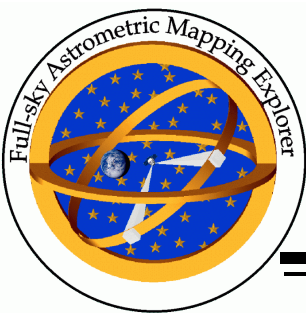
September

13, 2016



New Baseline - highlights

- New baseline design set September 12, 2001
 - Very similar to the July 28 design:
 - Smaller entrance apertures (40 x 9 cm vs 40 x 10)
 - Better lateral color (2.1 microns vs 4.8 microns)
 - Lens group moved in for clearance
 - Better fit into S/C envelope
 - Goodrich is now doing integration of optics to the Bench, and fabricating the FPA Window
 - No Calcium Fluoride element
 - IR reflecting coating may be gone
 - Compound Mirrors to be bonded on to Mating
- Bl September
- REVISED September 24, 2001
- 2
- C3-2014 RDP October 10, 11



New Optics

Requirements

Issue

Requirement

August Cass

September Cass

- ~~Basic Angle~~ ~~81°~~ 84.5 ° 84.3 ° 84.3 °
- Aperture Size > 40 x 9 cm 40 x 10 cm 40 x 9 cm
- Optical Quality < $\lambda / 13.5$ rms $\lambda / 16.4$ rms $\lambda / 15.0$ rms
- Field of View > 0.8° 1.25° 1.25°
- Focal Length 10 - 11.5 m 10.49 m 10.50 m
- Spectrum 550 - 850 nm 550 - 850 nm 550 - 850 nm
- Transmission M_v 5 - 14.25 M_v 5 - 14.4 M_v 5 - TBD
- Distortion* < 10 microns 1.3 microns 5.5 microns
- Lateral Color* < 5 microns 4.8 microns 2.1 microns
- Telecentricity ----- ~ 3.4° 4.2 ° - 4.6°

— * worst case

REVISED September 24, 20

September

13, 2016